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ABSTRACT

Self-referenced content is generally remembered better and faster than information encoded in other ways. To examine how self-relevant information is organized in memory, three experiments were conducted, comparing the effects of target-first or word-first methodology. In the target-first condition, subjects (N=15) saw one of the two questions, "Describes you" or "Describes Ronald Reagan," followed in one second by an adjective. In the word-first condition the adjective was presented first, followed in one second by one of the two questions. Subjects then completed a recall test, and the Self-Consciousness Questionnaire. In the second experiment (N=10) "most students" replaced Ronald Reagan as the target for other-reference, and the screen was blanked so that target and word were not seen together. In the third experiment the target (or word) was left on the screen until the word (or target) appeared. Three different intervals between word and target were examined. Results of the experiments suggest that information about other people seems to be stored by person, not by tags with adjectives. In all three experiments the word-first procedure led to slower decisions than target-first. However, the situation was less clear for self-reference decisions; in one experiment the word-first procedure was faster and for the other two experiments there was no real difference. Overall, it seems that the self-concept is not like the concept for other people, and information may be stored redundantly, in a separate set and with critical adjectives. (JAC)

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ORDER OF ACCESS TO SEMANTIC CONTENT AND SELF SCHEMA

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ORDER OF ACCESS TO SEMANTIC CONTENT AND SELF SCHEMA

John H. Mueller, W. Burt Thompson, & Janice S. Davenport

A considerable body of research attests to the significance and value of self-descriptiveness judgments for information processing. For example, self-referenced content is generally remembered better than information encoded in other ways, and access to self-relevant information is often faster than access to information that is not personally relevant (see recent reviews by Greenwald, 1981, and Rogers, 1981). The experiments I'm going to discuss were concerned with the manner in which self-relevant information is organized in memory.

Markus and Sentis (1982) described two extreme formats for the storage of self-relevant information, adaptations of which are shown in Figure 1. One possibility is that all self-descriptive trait adjectives are stored in a separate set, which constitutes the "self concept." Separate "person structures" might then exist for other people, containing what we know about those people. In this case, a self-descriptiveness judgment would require first accessing the self structure, rather than the structure for some other person, and then checking for the presence of the feature, and likewise for descriptiveness decisions about other people. Thus, knowledge about which target-person is involved should be given first in order to optimize performance.

In the other storage format, the emphasis is upon memory organization into semantic units, rather than "person schemata." There would be a knowledge structure for each trait, containing its meaning and then an associated "tag" ("pointer," "path," etc.) indicating self-descriptiveness. In addition to the

self-tag, there might be less salient tags indicating descriptiveness of other people, social desirability, frequency in the population, and so forth. All of these tags would be stored with the word, without requiring a separate structure for each person. This format would imply that it would be advantageous to know first what feature is to be considered because all person-tags are stored with that word. In fact, separate person-concepts might not even exist (which would at least be consistent with the curious failures to observe clustering by self/other categories in previous work, e.g., Hamilton, Katz, & Leirer, 1980; Mueller, 1982).

We suspect that either of these extreme storage formats is too simple to be true: in Psychology, choices are seldom just between plain vanilla or chocolate! However, the extremes do high-light the possible significance of a methodological feature that has not been examined. To the best of our knowledge, past research has used only the Target-First method. Herstein, Carroll and Hayes (1980) examined person-based versus trait-based presentation in a recall study, and some of John Anderson's studies (e.g., 1981) bear on this problem, but they either did not consider reation times or did not include the self concept. This is consistent with the general presumption of the existence of a self concept. Procedurally, it's a simple matter to reverse the interrogation sequence, presenting the adjective before the target person for the judgment (i.e., self or other), but to do so would have been theoretically pointless assuming the existence of person-based storage.

It was this Target-First vs. Word-First comparison that was examined in our research. This simple manipulation of target order potentially offers valuable information as to how personal information is represented in memory. If personally relevant information is stored in a separate structure, with additional structures for other people we know, then knowing which person is relevant would give us a head-start on a descriptiveness decision. Thus

decisions should be made faster for Target-First than for Word-First, because knowing the feature first provides no preliminary narrowing of the memory search. On the other hand, if the meaning-plus-tags format is the representation, then knowing the feature to be examined drastically narrows the search, whereas knowing the person-tag provides no head-start.

Therefore, the critical question is which is faster, Target-First or Word-First. However reasonable the assumption of person-concepts might be, it seems worth examining this procedural variation. At the least, we would extend the range of conditions over which self-reference effects have been examined. I'm going to report on three experiments we conducted that involved this manipulation. Fortunately, they were similar to one another and to other experiments in the literature, so I need describe the methodology only briefly.

EXPERIMENT 1

In the Target-First condition of Experiment 1, the subject saw one of two questions, "Describes you" or "Describes Ronald Reagan," followed about one second later by an adjective. In the Word-First condition, the adjective was presented and then one second later one of the two questions was presented. Fifteen subjects participated in each condition, always having just one type of presentation. The 96 adjectives were selected as either likable or unlikable from Anderson's (1968) norms (equating for meaningfulness), with half of each level of likability being used for self-reference and half for other-reference decisions. We administered a post-experimental recall test, and a decision-matching task where subjects had to identify the decision (self or other) that they had made for each adjective. Subjects also took the Self Consciousness Questionnaire (Buss, 1980), so we have measures of self-awareness. However, our primary interest was in the latency data (and there seems no clearcut rationale for expecting retention differences as a

function of order of target-word presentation), so in the interest of time I'll restrict attention today to just the reaction time for the judgments.

The left panel of Figure 2 shows the average reaction time by target person and target order; only cases where the feature was judged as describing the target person are shown, and the data are pooled over trait likability. The Order by Referent interaction was significant, F (1,28) = 22.07. As expected, self-reference decisions were made faster than other-reference, but this difference was significantly greater for the Word-First condition than the conventional Target-First condition. More interestingly, the self-reference decisions for the Word-First condition were actually significantly faster than for the Target-First condition (Ms = 1555 vs. 1203 msec, $p < .05$).

On the face of it, the outcome would be somewhat more in accord with the meaning-plus-tags storage format than with the person-based format. Although we found this quite interesting, we decided this result warranted further consideration. After all, it's tantamount to denying the existence of the self concept, something likely to be as unpopular as accepting the null hypothesis or denying the importance of ecological validity (etc.), and many of us would have to find new research pastures ....

EXPERIMENT 2

The second experiment was similar to the first, with just a few changes. We changed to "most students" as the target for other-reference, instead of Reagan shortened the interval between target and word from about one second to about a half second, and blanked the screen so that the target (word) was gone when the word (target) appeared. The Word-First and Target-First conditions each had 10 subjects.

The results for this experiment are shown in Figure 2, in the center panel. The Order by Referent interaction was again significant, F (1,18) = 5.70, but the form of the interaction was a bit different. In this case, the

order of target presentation made no difference for self-reference decisions. However, the Word-First procedure produced reliably slower decisions than the Target-First procedure for other-reference decisions (Ms = 1696 and 1335 msec, $p < .05$), something that also had been apparent in Experiment 1 though nonsignificantly in that case.

There was another experiment I won't be reporting that intervened between these two, and it produced results essentially like those for Experiment 2. Based on all of this, it seemed that having the target first was beneficial for decisions about other people, whether a specific or general other. On the other hand, self-reference was either hindered or unaffected by target order.

Even though the procedural differences were seemingly minor between Experiments 1 and 2, we decided to do another experiment. We had reduced the target-word (word-target) interval slightly between Experiments 1 and 2, partly because we thought perhaps that subjects on seeing the adjective in the Word-First condition might actually make both self and other decisions, then wait for the target to respond. We didn't really think that was going on, because it would seem to predict no self/other differences in the Word-First condition, when in fact the self/other difference was greatest there in both studies. However, just to be prudent, we decided to systematically examine the word-target interval itself in Experiment 3; perhaps with a very short interval we could defeat such a strategy, if such really existed. (The experiment I haven't described tried to defeat this strategy by adding a synonym decision, but as I noted earlier the Order by Referent effect was still like that in the center panel of Figure 2.)

EXPERIMENT 3

The procedure in Experiment 3 was very similar to Experiment 1, including leaving the target (or word) showing until the word (or target) appeared. However, three different intervals between the target and word (word and

target) were examined, as a within-subject manipulation. For a third of the items, the delay was about 200 msec, somewhat faster than in Experiment 2, for another third the delay was about 600 msec, as in Experiment 2, and for the rest the delay was about 1200 msec, longer than Experiment 2 but comparable to Experiment 1. The Word-First and Target-First conditions each had 15 subjects.

The results of this experiment are shown in the right-hand panel of Figure 2. In this case there was no Order by Referent interaction, F (1,28) = 1.94, and the figure indicates why: both self- and other-reference decisions produced about the same pattern collapsed over delay. That is, both tended to show somewhat slower decisions when the adjective was shown first, compared to when the person was identified first. However, the Word-First procedure was significantly slower only for the other-reference decisions, with no significant difference in target order for self-reference decisions. The Order main effect was not significant overall. The delay main effect was not significant, nor did delay enter into any significant interactions.

DISCUSSION

After three experiments, what can we say about the organization of knowledge about people? One thing does seem clear: information about other people seems to be stored by person, not by tags with adjectives. The evidence for this is that in all three experiments the Word-First procedure led to slower decisions than Target-First.

However, the situation was less clear for the self-reference decisions. One time the Word-First procedure was faster than Target-First, twice there was no real difference (actually, three times, counting the experiment we didn't report here). Just why the first experiment came out the way it did isn't clear. We've examined self-consciousness scores across the three experiments, and they were lower in Experiment 1 than in the other two studies (and social

anxiety was higher in Experiment 1), but there was little apparent covariation <u>within</u> the experiments.

Overall, it seems that the self concept is not like our concept for other people, and perhaps information is stored redundantly, in a separate set and with critical adjectives.

We seem to be out of chocolate and vanilla — anyone for spumoni?

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Figure 1: Person-concept organization versus semantic organization.

PERSON-BASED STORAGE (A^i refers to trait adjectives 1-n)

SELF	Spouse	Mother	Father	Tom	Dick	Harry	et al...
A^1	A^2	A^4	A^1	A^6	A^3	A^2	
A^2	A^5	A^5	A^3	.	A^5	A^8	
A^3	A^9	A^6	A^4	.	.	A^{13}	
A^4	.	.	.	.	.	.	
A^5	.	.	.	.	.	.	

SEMANTIC-BASED STORAGE

A^1	A^2	A^3	A^4	A^5	A^6	....
<meaning>	<meaning>	<meaning>	<meaning>	<meaning>	<meaning>	
SELF	SELF	SELF	SELF	SELF	Mother	
father	spouse	father	mother	spouse	father	
.	Harry	Dick	father	mother	Tom	
.	.	.	.	Dick	.	

Consider decisions of descriptiveness, "Does (Ai) describe (some person)?":

IF person-based storage is true, then the first step in answering requires entering the proper concept (column), so presenting the target person first would optimize retrieval speed.

IF semantic-based storage is true, then knowing the target person is not essential until the relevant semantic node is known, so presenting the trait adjective first would optimize decision speed.

Figure 2. Reaction time for self- and other-reference decisions as a function of whether the target person or the adjective was presented first.